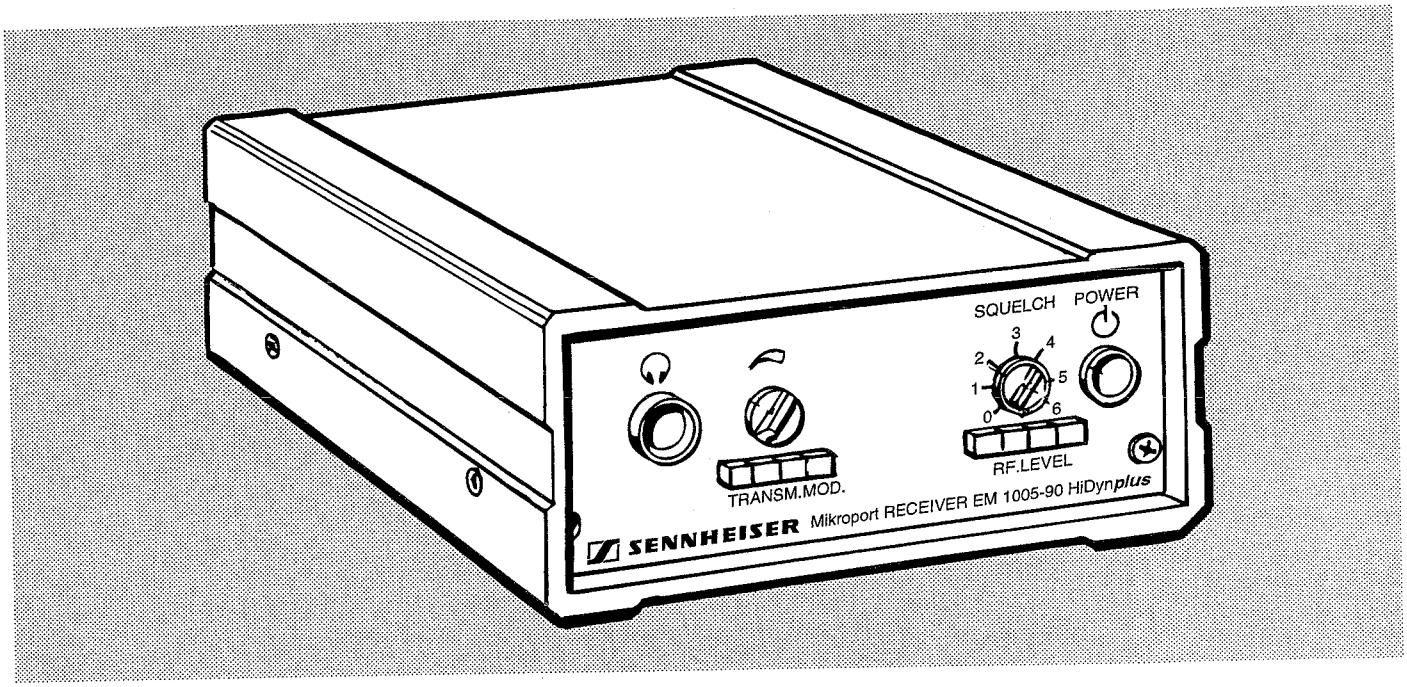
SENNHEISER
Service

EM 1005-90

HiDyn*plus*



Kurzbeschreibung

Der EM 1005-90 ist ein kompakter Hochfrequenzempfänger, der in Verbindung mit den Hochfrequenzsendern SKM 5000 VHF oder SK 50 VHF drahtlose Tonübertragung in hoher Qualität und Übertragungssicherheit gewährleistet.

Seine Merkmale:

- »HiDyn*plus*« Kompander
- Symmetrischer NF-Ausgang (XLR), Pegel einstellbar
- Kopfhöreranschlußbuchse (Ø 6,3 mm Klinke), Lautstärke einstellbar
- Leuchtdiodenzeilen zur Anzeige der Sendermodulation und Empfangsfeldstärke
- Elektronische Rauschsperre, einstellbar
- Netzbetrieb mit Steckernetzteil NT 1032, Batteriebetrieb 11 - 18 V DC
- Antenne und Steckernetzteil im Lieferumfang
- Anschlußbuchsen für abgesetzte Antennen

Brief description

The EM 1005-90 is a compact RF receiver which is used in conjunction with the model SKM 5000 VHF or SK 50 VHF transmitter to guarantee high-quality, safe audio transmission.

Its features:

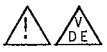
- "HiDyn*plus*" compander
- Symmetrical AF output (XLR), adjustable level
- Headphone jack (Ø 6.3 mm jack), adjustable volume
- Light-emitting diode strips to display transmitter modulation and field strength of reception
- Electronic squelch, adjustable
- Operation from line power with plug-in transformer or batterie operation 11 to 18 V DC
- Antenna and plug-in transformer included as standard accessory
- Connection jacks for detached antennas

Sicherheitsvorschriften/Safety requirements/ Prescrizioni de sicurezza / Prescriptions de sécurité / Prescripciones de seguridad

Deutsch

Achtung: Bei Eingriffen in das Gerät sind die Sicherheitsvorschriften nach VDE 701 (reparaturbezogen) bzw. VDE 0860 / IEC 65 (gerätebezogen) zu beachten !

Bauteile nach IEC- bzw. VDE-Richtlinien ! Im Ersatzfall nur Teile mit gleicher Spezifikation verwenden !

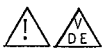


MOS - Vorschriften beim Umgang mit MOS - Bauteilen beachten !

English

Attention: Please observe the applicable safety requirements according to VDE 701 (concerning repairs) and VDE0860 / IEC 65 (concerning type of product) !

Components to IEC or VDE guidelines ! Only use components with the same specifications for replacement !

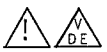


Observe **MOS** components handling instructions when servicing !

Italiano

Attenzione: Osservarne le corrispondenti prescrizioni di sicurezza VDE 701 (concernente servizio) e VDE 0860 / IEC 65 (concernente il tipo di prodono) !

Componenti secondo le norme VDE risp. te IEC ! In caso di sostituzione impiegare solo componenti con le stesse caratteristiche.



Osservare le relative prescrizioni durante, lavori con componenti **MOS** !

Français

Attention: Priere d'observer les prescriptions de sécurité VDE701 (concernant les reparations) et VDE 0860 / IEC 65 (concernant le type de produit) !

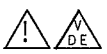
Composants répondant aux normes VDE ou IEC. Les remplacer uniquement par des composants ayant les memes spécifications.

Lors de la manipulation des circuits **MOS**, respecter les pescriptions MOS !

Español

Atención: Recomendamos las normas de seguridad VDE u otras normas equivalentes, por ejemplo: VDE 701 para reparaciones, VDE 0860 / IEC 65 para aparatos !

Componentes que cumplen las normas VDE / IEC. En caso de sustitución, emplear componentes con idénticas especificaciones !



Durante la reparacion observar las normas sobre componentes **MOS** !

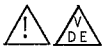
USA & Canada

Attention: This set can only be operated from AC mains of 120V / 60Hz. Also observe the information given on the rear of the set !

CAUTION: For continued protection against risk of fire replace only with same type fuses!
CAUTION: To reduce the risk of electric shock, do not remove cover (or back), no user-serviceable parts inside,refer servicing to qualified service personnel.

Components to safety guidelines (IEC / U.L.) ! Only use components with the same specifications for replacement !

Observe by checking leakage-current or resistance measurement that the exposed parts are acceptably insulated from the supply circuit.



Observe **MOS** components handling instructions when servicing !

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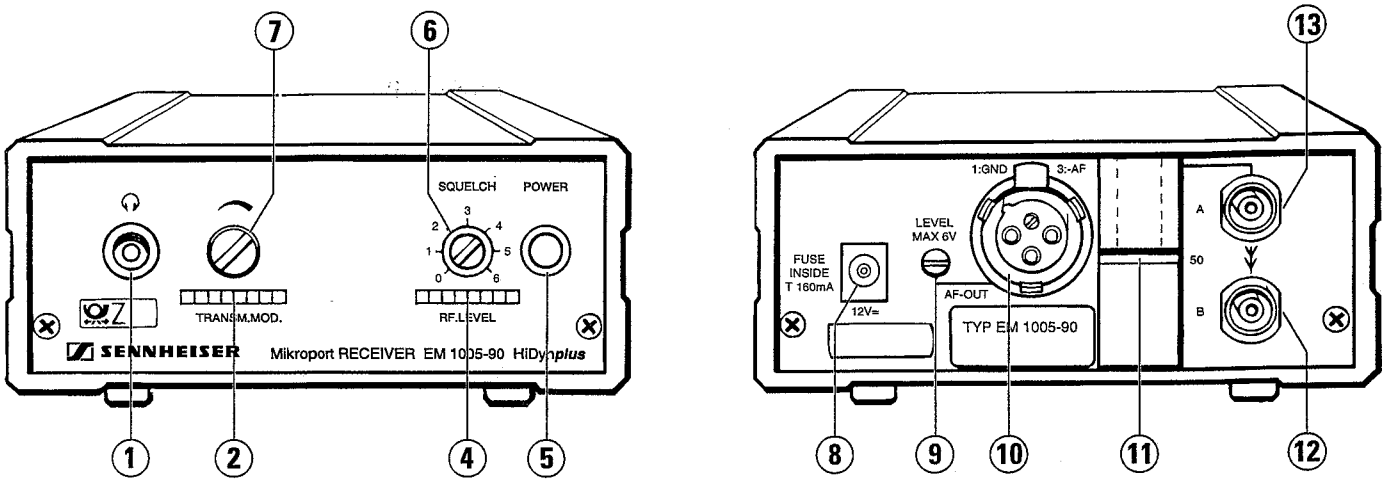
1. Bedienungselemente
Operating elements



Bedienungselemente

1	Kopfhörerausgang (6,3mm Ø) für Mono/Stereo-Kopfhörer. Min. Last ≥ 50 Ohm
2	Modulationsanzeige
4	Betriebsanzeige/HF-Anzeige (Rot = Kein Empfang; Gelb = Schwacher Empfang; Grün = Guter Empfang)
5	Betriebsschalter (Ein/Aus)
6	Einsteller für Rauschsperre. Einstellbereich: 0 bis 100 µV
7	Lautstärkeeinsteller für Kopfhörerbuchse
8	Buchse für externe Gleichspannungsquellen 11 - 18V
9	Einsteller für NF-Ausgangsspannung
10	NF-Ausgang, XLR, Ausgangspegel bei Nennhub/Spitzenhub: +12dBm / +18dBm
11	Buchse für Teleskopantenne (GZA 1001)
12, 13	Eingangsbuchsen für abgesetzte Antennen, BNC. Impedanz: 50 Ohm

Operating elements

1	Headphone output (6.3 mm Ø) for mono/stereo headphone. Min. load ≥ 50 ohms
2	Modulation display
4	Power indicator/RF display (red = no reception; yellow = weak reception; green = good reception)
5	Power switch (on/off)
6	Squelch control. Adjustment range: 0 to 100 µV
7	Volume control for headphone jack
8	Jack for external direct voltage sources 11 - 18 V
9	AF-output voltage control
10	AF-output, XLR. Output level at rated/peak swing: + 12 dBm/+ 18 dBm
11	Jack for GZA 1001 telescopic antenna
12, 13	Input jacks for detached antennas, BNC. Impedance: 50 ohms

2. Technische Daten

Empfangsfrequenz	Eine Frequenz im Bereich von 138 - 250 MHz
Nennhub/Spitzenhub	± 40 kHz / ± 56 kHz
Nachbarkanalselektion bei Verstimmung von 400 / 40 kHz (2-Sender Methode)	> 70 dB
Interkanalmodulationsdämpfung bezogen auf S/N =26 dB, Trägerabstand 400 kHz und 800 kHz (2 Sender-Methode)	> 60 dB
ZF Selektion	> 80 dB
Spiegelselektion	> 70 dB
HF-Eingänge	a. Buchse für Antenne GZA 1001 b. BNC-Buchsen, unsymmetrisch; 50 Ω
NF-Ausgang	XLR Stecker; erdfrei, symmetrisch, einstellbar; Nennbelastung: 600 Ω
NF-Ausgangsspannung bei Nennhub, 1 kHz, und mehr als 1,5 µV HF-Spannung	15 mV - 3,1 V, einstellbar
Kopfhörerausgang	Ø 6,3 mm Klinke, unsymmetrisch, einstellbar; Nennbelastung ≥ 50 Ω
NF Ausgangsspannung am Kopfhörerausgang bei Nennhub, 1 kHz und mehr als 1,5 µV HF-Spannung	0 V - 3 V, einstellbar
Tonfrequenzbereich	20 - 22000 Hz
Klirrfaktor bei Nennhub, 1 kHz und 1 mV HF-Spannung	≤1%
Deemphasis	50 µs
Signal-Rauschabstand bei Nennhub und	
1,5 µV HF Spannung	≥ 60 dB A
20 µV HF Spannung	≥ 105 dB A
Rauschsperre, einstellbar	0 - 100 µV
Stromversorgung (Steckernetzteil)	11 - 18 V DC
Stromaufnahme bei DC-Speisung	ca. 120 mA
Abmessungen in mm	168 x 120 x 50
Gewicht	ca. 800 g
BZT-Prüfnummer	A 4000 28 AFR
Lieferumfang	1 Empfänger EM 1005-90, 1 Teleskopantenne GZA 1001, 1 Steckernetzteil NT 1032

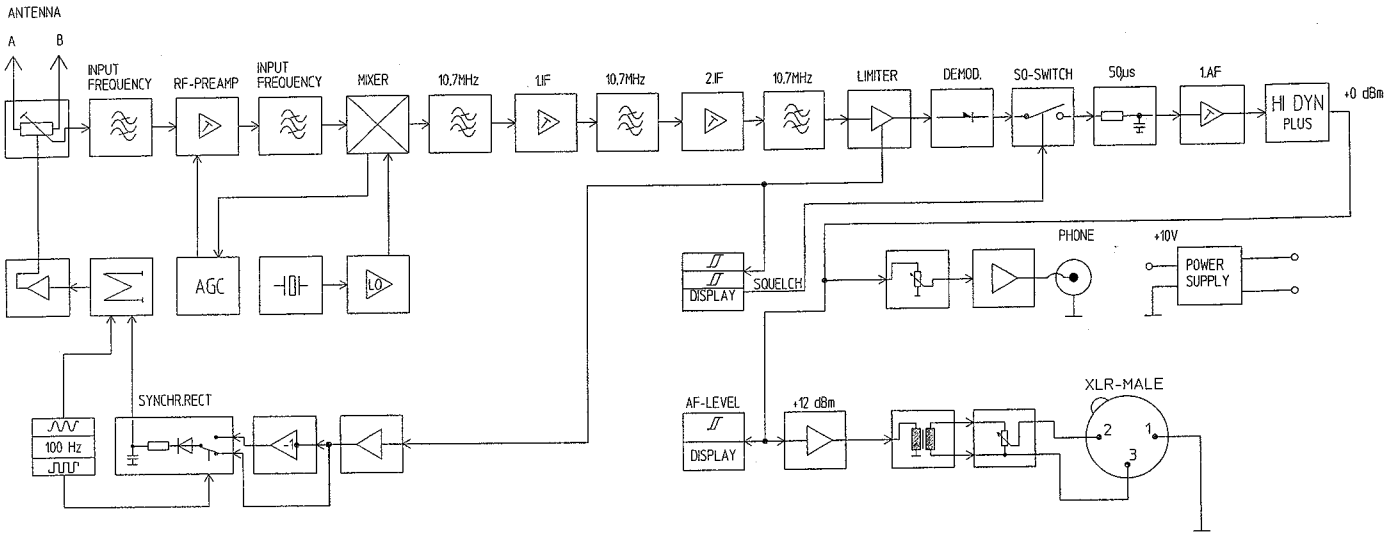
Änderungen vorbehalten

2. Technical data

Receiving frequency	One frequency within the range 138 - 250 MHz
Rated/peak swing	± 40 kHz / ± 56 kHz
Adjacent channel rejection when mistuned by 400 / 40 kHz (2 transmitter method)	> 70 dB
Spurious rejection referring to S/N = 26 dB, carrier spacing. 400 kHz and 800 kHz (2 transmitter method)	> 60 dB
IF selectivity	> 80 dB
Signal-to-image ratio	> 70 dB
RF inputs	a. Jack for GZA 1001 telescopic antenna b. BNC jacks, unbalanced; 50 ohms
AF output	XLR plug; floating; balanced; adjustable; rated load: 600 ohms
AF output voltage at rated swing, 1 kHz, and more than 1.5 µV RF voltage	15 mV - 3.1 V, adjustable
Headphone output	6.3 mm Ø jack socket, unbalanced; adjustable; rated load: ≥ 50 ohms
AF output voltage at headphone output at rated swing, 1 kHz and more than 1.5 µV RF-voltage	0 mV - 3 V, adjustable
Audio frequency range	20 - 20 000 Hz
Distortion factor at rated swing, 1 kHz and 1 mV RF voltage	≤1%
Deemphasis	50 µs
Signal-to-noise ratio at rated swing and	
1.5 µV RF voltage	≥ 60 dB A
20 µV RF voltage	≥ 105 dB A
Squelch, adjustable	0 - 100 µV
Power supply (Plug-in transformer)	11 - 18 V DC
Power input with DC supply	approx. 120 mA
Dimensions in mm	168 x 120 x 50
Weight	approx. 800 g
Standard equipment	1 EM 1005-90 receiver, 1 GZA 1001 telescopic antenna, 1 NT 1032 plug-in transformer

Subject to alterations.

3. Blockschaltbild
Block diagram



4. Service Hinweise

4.1. HF-Abgleich

Die Meßpunkte des HF-Oszillator, HF-Filter und der HF-Eingangskreise liegen innerhalb der Abschirmung. Für den Abgleich muß der Profildeckel (32) von der Unterseite der Leiterplatte entfernt werden.

4.2. HiDyn*plus*

Im Bedarfsfall kann der HiDyn*plus* Kompander auf HiDyn umgerüstet werden. Dazu sind R 96 und R 110 auf 0 Ω zu bestücken und C 54 ist von 0,47 µ/ 20 V auf 2,2 µ / 16 V zu setzen.

Notizen:

4. Service hints

4.1. RF alignment

The measuring points of the RF oscillator, RF filters and RF input circuits are only accessible if the profile (32) at the bottom of the PCB is removed.

4.2. HiDyn*plus*

To work with the HiDyn compander system instead of the HiDyn*plus* compander system bridge R 96 and R 110 with 0 ohm resistors. Set C 54 from 0.47 µF/ 20 V to 2.2 µF/ 16 V.

Notes:

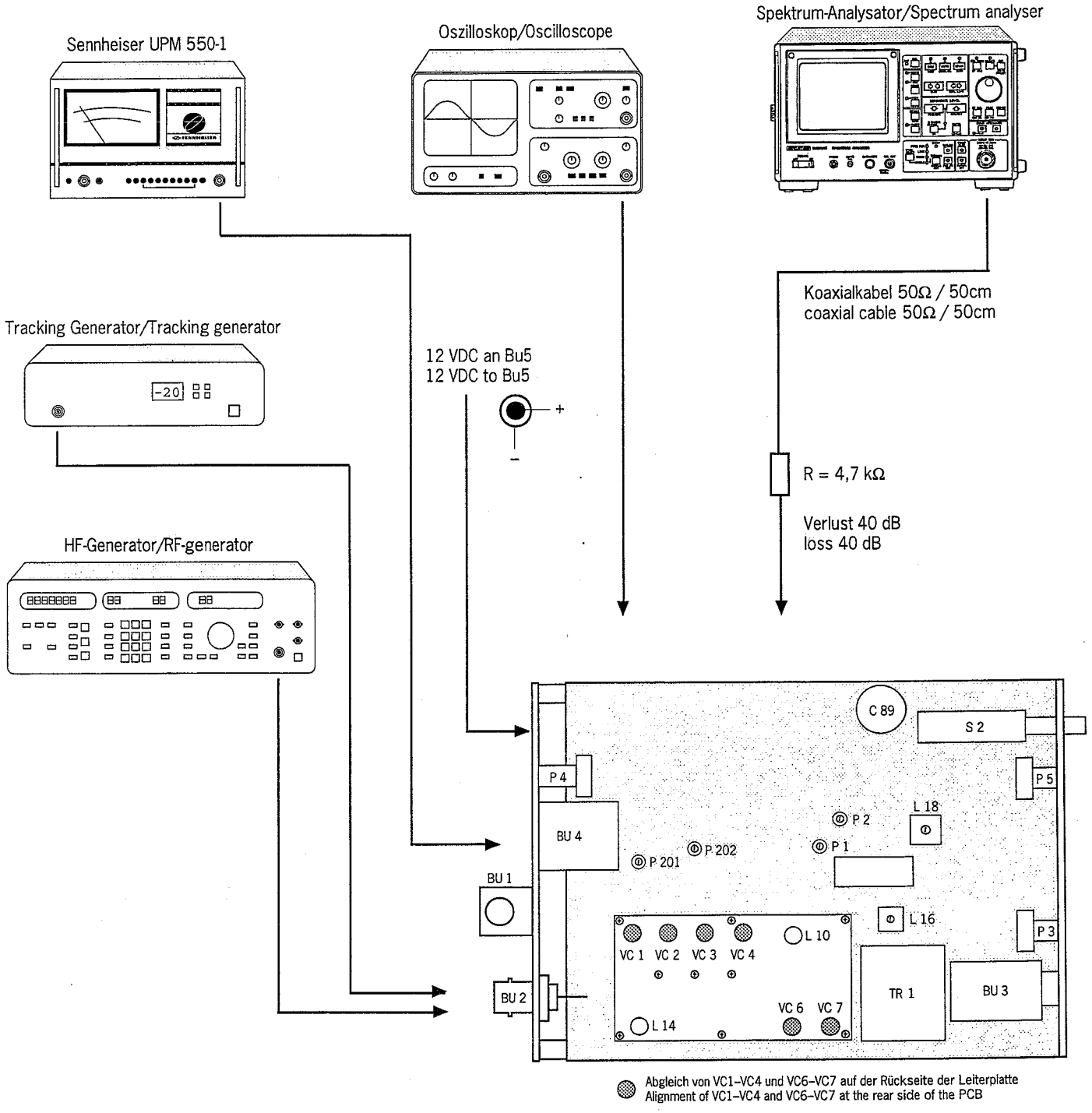
5. Erforderliche Meßgeräte und Prüfmittel

1 40 dB-Kabel (siehe Meßaufbau)
1 Spektrum-Analysator (z. B. Advantest R 4131A)
1 Tracking Generator (z. B. Advantest TR 4131A)
1 Klirrfaktormesser (z. B. UPM 550-1)
1 Fremdspannungsfilter (z. B.UPM 550-1)
1 NF-Millivoltmeter (z. B. UPM 550-1)
1 Oszilloskop (z. B. Hameg HM 605)
1 Meßsender (z. B. Rohde & Schwarz SMS 2)
1 Vielfachmeßinstrument (100 kΩ/V)
1 Steckernetzteil NT 1032

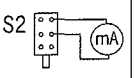
5. Measuring instruments and test equipment

1 40 dB cable (see test set-up)
1 Spectrum analyzer (e. g. Advantest R 4131A)
1 Tracking generator (e. g. Advantest TR 4131A)
1 THD measuring device (e. g. UPM 550-1)
1 Unweighted noise filter (e. g. UPM 550-1)
1 AF millivoltmeter (e. g. UPM 550-1)
1 Oscilloscope (e. g. Hameg HM 605)
1 Test generator (e. g. Rohde & Schwarz SMS 2)
1 Multimeter (100 kΩ/V)
1 NT 1032 plug-in transformer

6. Meßaufbau/Test set-up



7. Prüf - und Abgleichanweisung

Nr.	Messung, Einstellung	Signal-einspeisung	Vorbereitung, Geräteeinstellung	Meßpunkt	Sollwert	Einsteller	Bemerkungen
1	Betriebsspannung		S2 "Ein"	IC2 / Pin 1	U=10V ±0,5V		
2	Stromaufnahme, minimal		S2 "Aus"	S2 	115mA ±15mA		S2 mit Amperemeter überbrücken
3	AAC - Oszillatorfrequenz		S2 "Ein" Oszilloskop	TP 2	f=100Hz	P202	Einschwingverhalten durch Ein - und Aus - schalten überprüfen
4	AAC - Modulations-spannung		Oszilloskop	TP 1	U=3,5 Vss	P201	
5	HF - Oszillator		Spektrum-Analysator	Basis T2		L10	Einschwingverhalten durch Ein - und Aus - schalten überprüfen
5.1	Oszillator Filter		Spektrum-Analysator	IC1 / Pin18	max. Amplitude ca. 0dBm	VC5, VC6	
6	HF - Eingangskreise	Tracking Generator an Bu2=-30dBm	TP 1 auf Masse Spektrum-Analysator	IC1 / Pin5	> -20dBm	VC1 / VC2 VC3 / VC4	
7	ZF - Kreise	HF= siehe Typenschild U=10µV, Hub=40kHz, NF=1kHz	UPM 550-1, Oszilloskop	Bu4	max. NF	L14, L16, L18	Eingangsspannung stetig verkleinern, max. Empfindlichkeit einstellen
8	NF - Pegel (HiDyn)	HF=1mV Mod.: wie 7.	UPM 550-1	TP 5	0dBm / 775mV	P2	
8.1	NF - Ausgangspegel	wie 8.	P4 – Rechtsanschlag UPM 550-1	Bu4	ca. 3,1Veff		
9	Klirrfaktor	wie 8.	NF an Bu4=775mV UPM 550-1	Bu4	≤ 1%	L18	Ausgangspegel an Bu4 beachten
10	Fremdspannungs-abstand	HF=3µV Mod.: wie 7.	UPM 550-1	Bu4	≥ 70 dB A		
10.1	Fremdspannungs-abstand	HF=1mV Mod.: wie 7.	UPM 550-1	Bu4	≥ 100 dB A		
11	HF - Pegelanzeige	HF=10µV Mod.: wie 7.				P1	Gelbe LED muß gerade aufleuchten
12	Rauschsperre	HF=2,5µV Mod.: wie 7.				P5	Rauschsperre setzt ca. bei Squelch Stellung "1" ein
13	Kopfhörer Ausgang	HF=1mV Mod.: wie 7.	UPM 550-1	Bu3	ca. 3,0Veff		
14	AAC - Automatic Antenna Control Eingang B	HF=2,5µV Mod.: wie 7. Bu201 (B)	Oszilloskop	TP 1	positiver Offset		
14.1	AAC - Automatic Antenna Control Eingang A	HF=2,5µV Mod.: wie 7. Bu2 (A)	Oszilloskop	TP 1	negativer Offset		

7. Test and alignment instructions

No.	Adjustment, Measurement	Signal - input	Preparation, Unit setting	Testpoint	Nominal value	Adjuster	Remarks
1	Operating voltage		S2 "On"	IC2 / Pin 1	U=10V ±0.5V		
2	Min. current consumption		S2 "Off"	S2	115mA ±15mA		Bridge S2 with Ammeter
3	AAC - oscillator frequency		S2 "On" Oscilloscope	TP 2	f=100Hz	P202	Check transient response by actuating on/off switch
4	AAC - Modulation voltage		Oscilloscope	TP 1	U=3.5 Vpp	P201	
5	Local oscillator		Spectrum-analyser	T2 / Base		L10	Check transient response by actuating on/off switch
5.1	LO - filter		Spectrum-analyser	IC1 / Pin18	max. level	VC5, VC6	
6	RF - input circuit	Tracking generator at Bu2=-30dBm	TP 1 to ground Spectrum-analyser	IC1 / Pin5	> -20dBm	VC1 / VC2 VC3 / VC4	
7	IF - circuit	RF=see Type plate U=10µV, Dev=40kHz, AF=1kHz	UPM 550-1, Oscilloscope	Bu4	max. AF	L14, L16, L18	Decrease input voltage to adjust max. sensitivity
8	AF - level (HiDyn)	RF=1mV Mod.: as 7.	UPM 550-1	TP 5	0dBm / 775mV	P2	
8.1	AF - output level	as 8.	P4 – turn cw UPM 550-1	Bu4	approx. 3.1Veff		
9	THD	as 8.	AF at Bu4=775mV UPM 550-1	Bu4	≤ 1%	L18	Check output level at Bu4
10	S/N - ratio	RF=3µV Mod.: as 7.	UPM 550-1	Bu4	≥ 70 dB A		
10.1	S/N - ratio	RF=1mV Mod.: as 7.	UPM 550-1	Bu4	≥ 100 dB A		
11	RF - level meter	RF=10µV Mod.: as 7.				P1	Yellow LED just bright
12	Squelch	RF=2.5µV Mod.: as 7.				P5	Squelch becomes effective around pos. "1"
13	Headphone output	RF=1mV Mod.: as 7.	UPM 550-1	Bu3	approx. 3.0Veff		
14	AAC - Automatic Antenna Control input B	RF=2.5µV Mod.: as 7. Bu201 (B)	Oscilloscope	TP 1	positive offset		
14.1	AAC - Automatic Antenna Control input A	RF=2.5µV Mod.: as 7. Bu2 (A)	Oscilloscope	TP 1	negative offset		

Frequenzbereich Frequency range (MHz)	*Bauteile Components C6	L9	R301	R302
138-170	8p2	0,68µH	-	-
170-205	12p	1,0 µH	10k	-
205-230	8p2	0,68µH	-	10k
230-250	4p7	0,68µH	10k	10k

* optionelle Bauelemente

** Bauelemente sind Filterbestandteile

△ Frequenzvariable-Bauelemente

⚠ Netzspannungführende Komponenten

IC1,IC2. DIL 18

IC5 SO 16-L

IC203 SO 16

IC7,IC8 IC202 SO 14

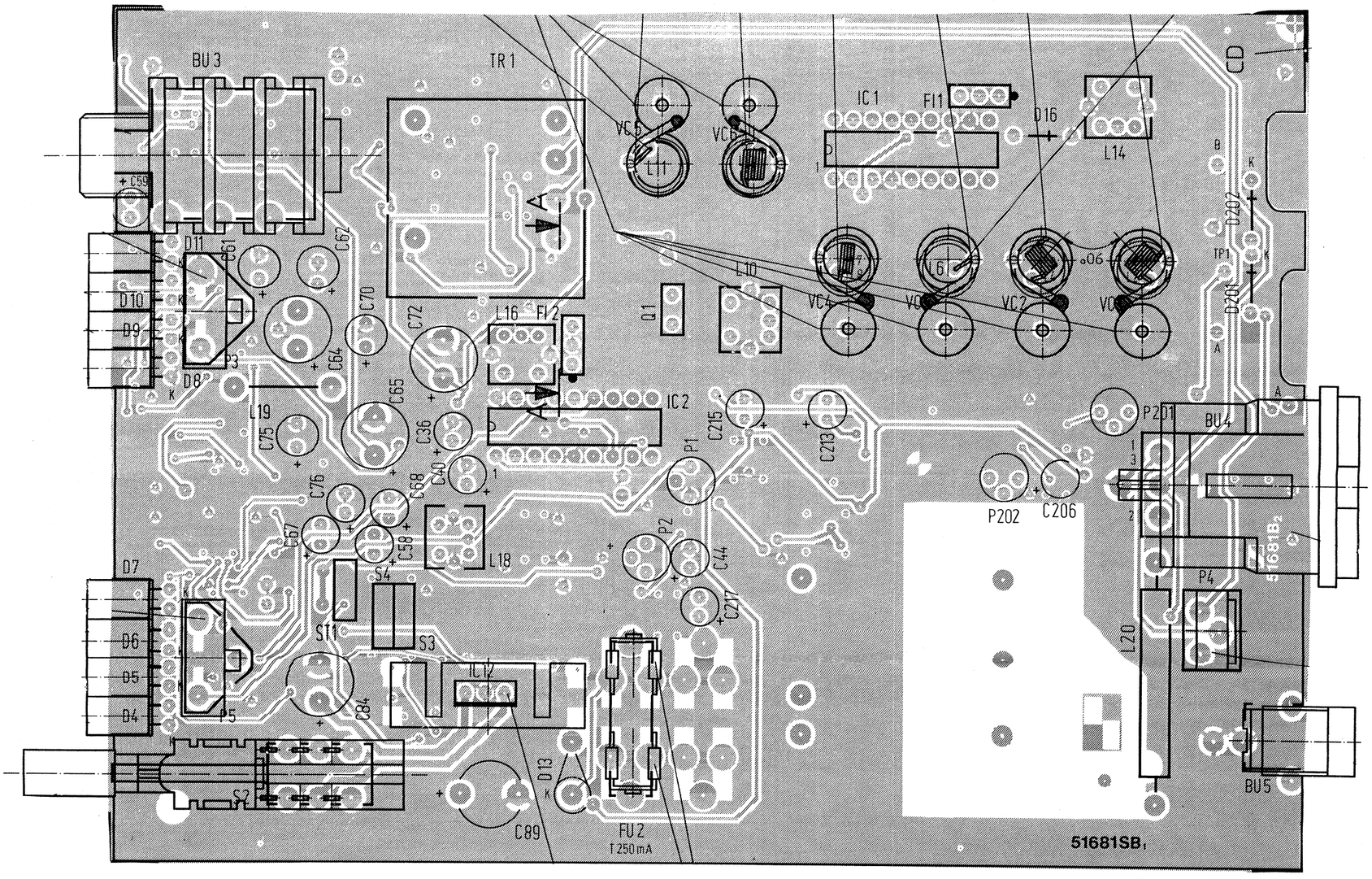
IC3,IC4,IC6 IC9,IC10 IC201 SO 8

T1,T2,T3,T4,T6,T7 T8,T9,T10,T11, T12,T13,T14,T15, T201,T202,T204 SOT 23

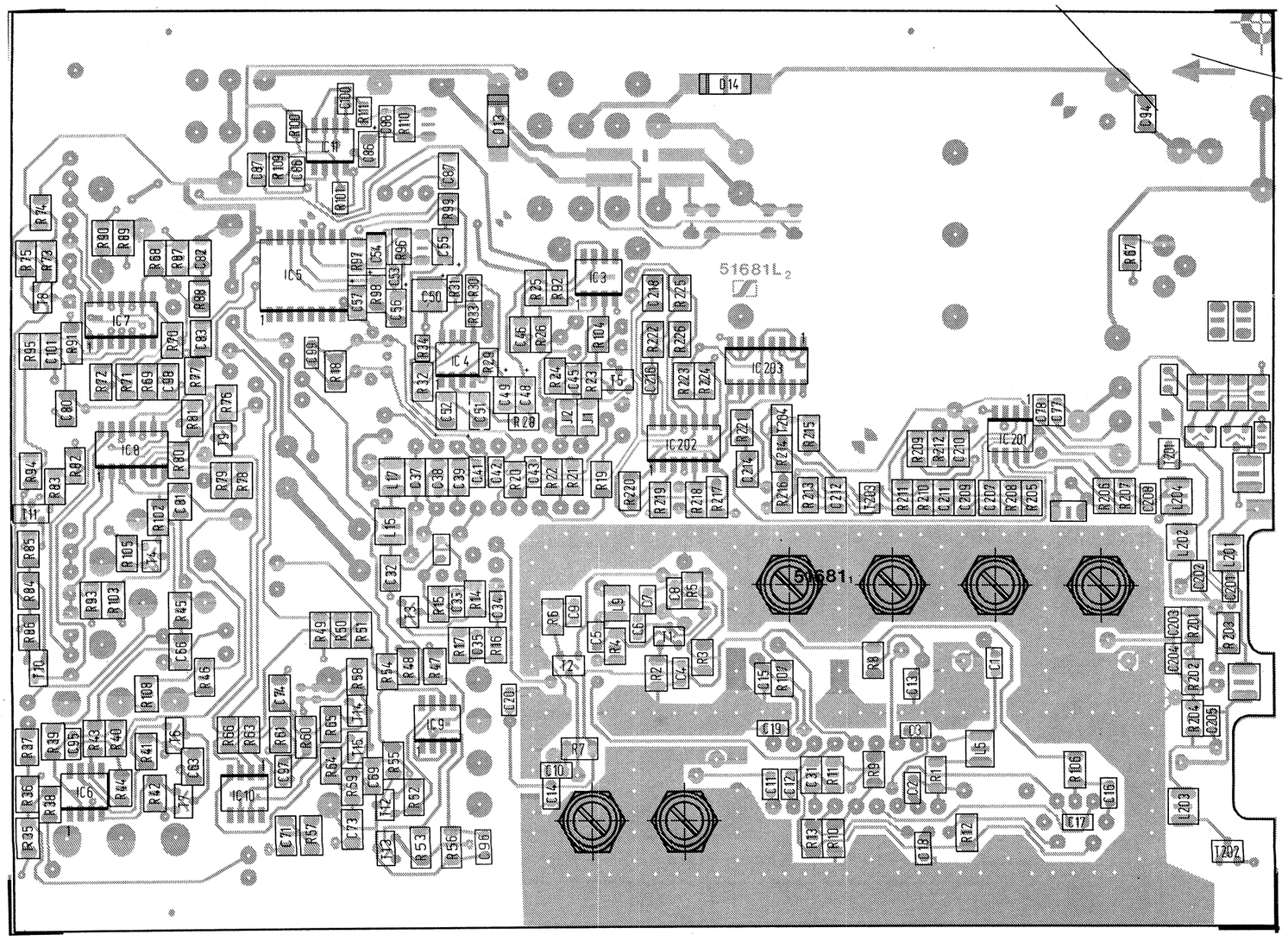
T5,T203 SOT 23

IC12 TO 220

Stromlaufplan EM 1005 - 90, 1 Kanal, 138 - 250 MHz
Circuit diagram EM 1005 - 90, 1 channel, 138 - 250 MHz

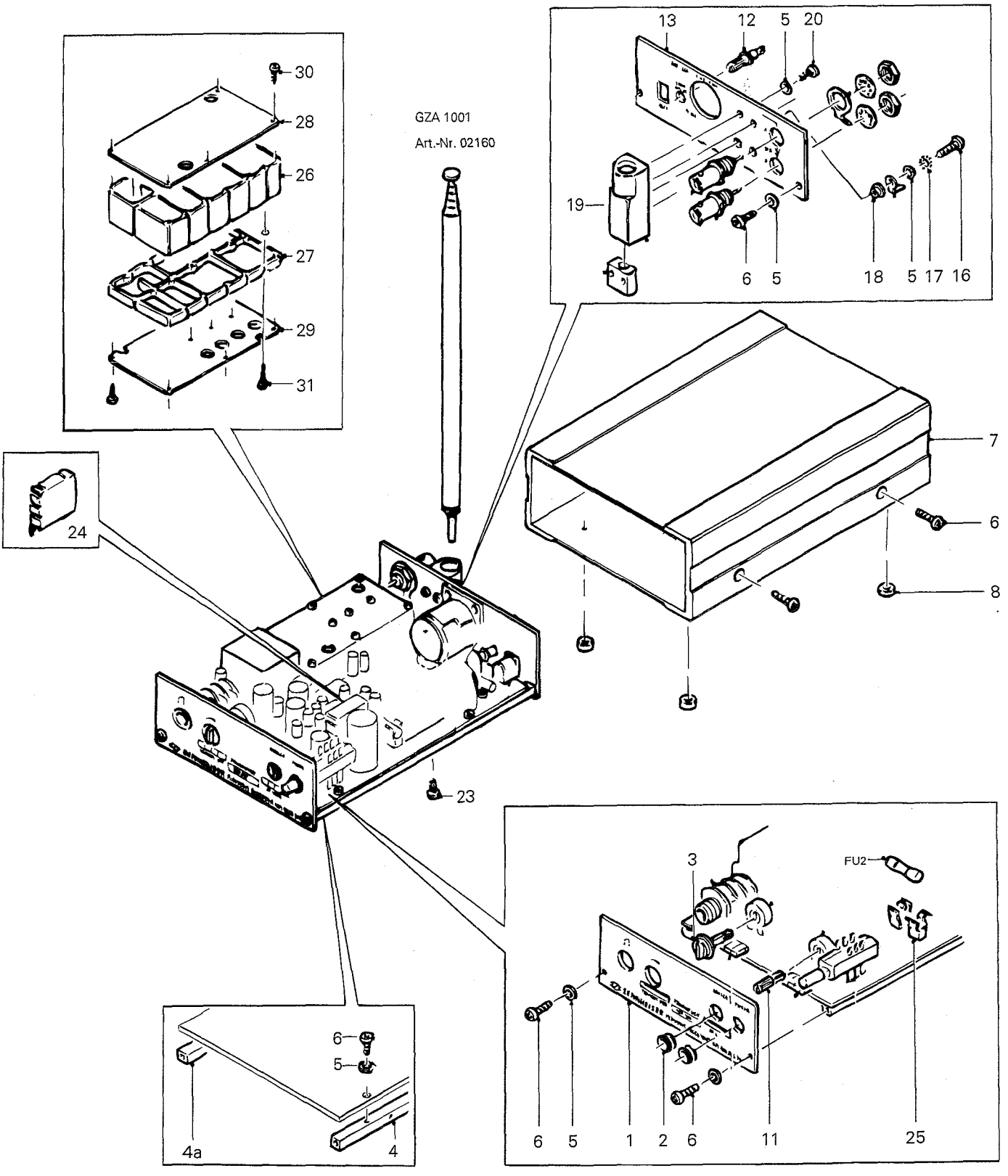


EM 1005 - 90, Gedruckte Schaltung, Bestückungsseite, Elektronik, 1 Kanal, 138 - 250 MHz
EM 1005 - 90, printed circuit board, equipped side, electronic, 1 channel, 138 - 250 MHz



EM 1005 - 90, Gedruckte Schaltung, Lötseite, Elektronik, 1 Kanal, 138 - 250 MHz
EM 1005 - 90, printed circuit board, foil side, electronic, 1 channel, 138 - 250 MHz

10. Explosionszeichnung
Exploded view



10. Ersatzteile
Spare parts

POS	IDENT	BEZEICHNUNG	DESCRIPTION
001A	52456	Frontplatte (EM1005/HDP)	Front panel (EM1005/HDP)
001B	52528	Frontplatte (EM1005/BZT)	Front panel (EM1005/BZT)
002	34510	Durchführung	Ring
003	36048	Knopf	Knob
004	52038	Montagesäule	Mountig device, columnar
004A	52040	Montagesäule	Mountig device, columnar
005	22662	Scheibe 2,7 DIN433 (MOQ:10x)	Washer 2.7 DIN433 (MOQ:10x)
006	52104	Schraube CM2,5x8 DIN7500 (MOQ:10x)	Screw CM2.5x8 DIN7500 (MOQ:10x)
007	19354	Gehäuse	Housing
008	47793	Fuß	Foot
009	52546	Netzteil 230V/15VDCx0,6A	Power supply unit 230V/15VDCx0.6A
011	19819	Steckwelle	Shaft extension
012	19756	Steckwelle	Shaft extension
013	52437	Rückwand	Rear panel
016	22988	Linsen-Schraube M2,5x16 DIN7985 (MOQ:10x)	Lens screw M2.5x16 DIN7985 (MOQ:10x)
017	22857	Zahnscheibe A2,8 DIN6797 (MOQ:10x)	Tooth lock washer A2.8 DIN6797 (MOQ:10x)
018	20290	Buchse	Socket
019	32901	Halterung	Holder
020	26934	Blechschraube St2,2x6,5 DIN7981 (MOQ:10x)	Sheet metal screw St2.2x6.5 DIN7981 (MOQ:10x)
023	26702	Blechschraube St2,2x4,5 DIN7981 (MOQ:10x)	Sheet metal screw St2.2x4.5 DIN7981 (MOQ:10x)
024	40577	Kühlkörper	Heat sink
025	21473	Sicherungshalter	Fuse holder
026	39744	Abschirmprofil	Shielding profile
027	39745	Abschirmprofil	Shielding profile
028	39746	Profildeckel	Cover
029	39747	Profildeckel	Cover
030	42683	Schraube DG 22x6 (MOQ:10x)	Screw DG 22x6 (MOQ:10x)
031	42684	Schraube DG 22x10 (MOQ:10x)	Screw DG 22x10 (MOQ:10x)
BU001	21993	BNC-Buchse 50R	BNC socket 50R
BU002	21993	BNC-Buchse 50R	BNC socket 50R
BU003	40441	Buchse, 6,3 mm	Socket, 6.3 mm
BU004	24204	Einbaustecker	Socket
BU005	45409	Hohlklinkenbuchse	Jack bush
BU201	21993	BNC-Buchse 50R	BNC socket 50R
C001	28692	SMD Kondensator KERKO 100pF 50V NP0 (MOQ:50x)	SMD capacitor KERKO 100pF 50V NP0 0805 (MOQ:50x)
C002	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C003	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C004	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C005	19584	SMD Kondensator KERKO 22pF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 22pF 50V NP0 0805 (MOQ:50x)
C006	40587	SMD Spule 0,68uH	SMD coil 0.68uH
C006A	29565	SMD Kondensator KERKO 8,2pF 50V NP0 0805 (MOQ:50x) 138-170, 205-230MHz	SMD capacitor KERKO 8.2pF 50V NP0 0805 (MOQ:50x) 138-170, 205-230MHz
C006B	33125	SMD Kondensator KERKO 12pF 50V N150 (MOQ:50x) 170-205MHz	SMD capacitor KERKO 12pF 50V N150 0805 (MOQ:50x) 170-205MHz
C006C	17941	SMD Kondensator KERKO 4,7pF 50V NP0 0805 (MOQ:50x) 230-250MHz	SMD capacitor KERKO 4.7pF 50V NP0 0805 (MOQ:50x) 230-250MHz
C007	29833	SMD Kondensator KERKO 82pF 50V N150 (MOQ:50x)	SMD capacitor KERKO 82pF 50V N150 (MOQ:50x)
C008	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C009	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C010	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C011	28692	SMD Kondensator KERKO 100pF 50V NP0 (MOQ:50x)	SMD capacitor KERKO 100pF 50V NP0 0805 (MOQ:50x)
C012	29011	SMD Kondensator KERKO 2,2pF 50V NP0 (MOQ:50x)	SMD capacitor KERKO 2.2pF 50V NP0 (MOQ:50x)
C013	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C014	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C015	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C016	17648	SMD Kondensator KERKO 10nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 10nF 50V X7R 0805 (MOQ:50x)
C018	17648	SMD Kondensator KERKO 10nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 10nF 50V X7R 0805 (MOQ:50x)
C019	17648	SMD Kondensator KERKO 10nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 10nF 50V X7R 0805 (MOQ:50x)
C020	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C021	19482	SMD Kondensator KERKO 330pF 50V NP0 (MOQ:50x)	SMD capacitor KERKO 330pF 50V NP0 0805 (MOQ:50x)
C031	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C032	32987	SMD Kondensator KERKO 470nF 25V Z5U 1206 (MOQ:50x)	SMD capacitor KERKO 470nF 25V Z5U 1206(MOQ:50x)
C033	17648	SMD Kondensator KERKO 10nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 10nF 50V X7R 0805 (MOQ:50x)
C034	17648	SMD Kondensator KERKO 10nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 10nF 50V X7R 0805 (MOQ:50x)
C035	19617	SMD Kondensator KERKO 10pF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 10pF 50V NP0 0805 (MOQ:50x)
C036	27962	Kondensator AL-ELKO 22uF 16V CA	Capacitor AL-ELKO 22uF 16V CA
C037	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C038	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C039	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C040	27962	Kondensator AL-ELKO 22uF 16V CA	Capacitor AL-ELKO 22uF 16V CA

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C041	28816	SMD Kondensator KERKO 33pF 50V NP0 (MOQ:50x)	SMD capacitor KERKO 33pF 50V NP0 (MOQ:50x)
C042	28816	SMD Kondensator KERKO 33pF 50V NP0 (MOQ:50x)	SMD capacitor KERKO 33pF 50V NP0 (MOQ:50x)
C043	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C044	27962	Kondensator AL-ELKO 22uF 16V CA	Capacitor AL-ELKO 22uF 16V CA
C045	17630	SMD Kondensator KERKO 4,7nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 4.7nF 50V X7R 0805 (MOQ:50x)
C046	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C047	28601	Kondensator AL-ELKO 47uF 10V	Capacitor AL-ELKO 47uF 10V
C048	45050	SMD Kondensator TA-KO 470nF 20V	SMD Capacitor TA-KO 470nF 20V
C049	45050	SMD Kondensator TA-KO 470nF 20V	SMD Capacitor TA-KO 470nF 20V
C050	45010	SMD Kondensator TA-KO 10uF 4V ERO ETPW1	SMD capacitor TA-KO 10uF 4V ERO ETPW1
C051	45050	SMD Kondensator TA-KO 470nF 20V	SMD Capacitor TA-KO 470nF 20V
C052	45050	SMD Kondensator TA-KO 470nF 20V	SMD Capacitor TA-KO 470nF 20V
C053	17648	SMD Kondensator KERKO 10nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 10nF 50V X7R 0805 (MOQ:50x)
C054	45050	SMD Kondensator TA-KO 470nF 20V	SMD Capacitor TA-KO 470nF 20V
C055	48318	SMD Kondensator TA-KO 10uF 4V	SMD capacitor TA-KO 10uF 4V
C056	48318	SMD Kondensator TA-KO 10uF 4V	SMD capacitor TA-KO 10uF 4V
C057	45043	SMD Kondensator TA-KO 2,2uF 16V IEC 384,3	SMD capacitor TA-KO 2.2uF 16V IEC 384,3
C058	27962	Kondensator AL-ELKO 22uF 16V CA	Capacitor AL-ELKO 22uF 16V CA
C059	24506	Kondensator TA-ELKO 1uF 35V	Capacitor TA-ELKO 1uF 35V
C061	28601	Kondensator AL-ELKO 47uF 10V	Capacitor AL-ELKO 47uF 10V
C062	28601	Kondensator AL-ELKO 47uF 10V	Capacitor AL-ELKO 47uF 10V
C063	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C064	17460	Kondensator AL-ELKO 220uF 40V CA	Capacitor AL-ELKO 220uF 40V CA
C065	40465	Kondensator AL-ELKO 470uF 16V	Capacitor AL-ELKO 470uF 16V
C066	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C067	25730	Kondensator AL-ELKO 4,7uF 35V	Capacitor AL-ELKO 4.7uF 35V
C068	27962	Kondensator AL-ELKO 22uF 16V CA	Capacitor AL-ELKO 22uF 16V CA
C069	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C070	28601	Kondensator AL-ELKO 47uF 10V	Capacitor AL-ELKO 47uF 10V
C071	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C072	40465	Kondensator AL-ELKO 470uF 16V	Capacitor AL-ELKO 470uF 16V
C073	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C074	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C075	28601	Kondensator AL-ELKO 47uF 10V	Capacitor AL-ELKO 47uF 10V
C076	27962	Kondensator AL-ELKO 22uF 16V CA	Capacitor AL-ELKO 22uF 16V CA
C077	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C078	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C080	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C081	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C082	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C083	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C084	17460	Kondensator AL-ELKO 220uF 40V CA	Capacitor AL-ELKO 220uF 40V CA
C085	48318	SMD Kondensator TA-KO 10uF 4V	SMD capacitor TA-KO 10uF 4V
C086	19479	SMD Kondensator KERKO 470pF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 470pF 50V NP0 0805(MOQ:50x)
C087	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C088	17630	SMD Kondensator KERKO 4,7nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 4.7nF 50V X7R 0805 (MOQ:50x)
C089	40752	Kondensator AL-ELKO 1mF 50V GPF	Capacitor AL-ELKO 1mF 50V GPF
C094	17648	SMD Kondensator KERKO 10nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 10nF 50V X7R 0805 (MOQ:50x)
C098	32987	SMD Kondensator KERKO 470nF 25V Z5U 1206 (MOQ:50x)	SMD capacitor KERKO 470nF 25V Z5U 1206(MOQ:50x)
C099	28836	SMD Kondensator KERKO 560pF 50V NP0 (MOQ:50x)	SMD capacitor KERKO 560pF 50V NP0 (MOQ:50x)
C100	19584	SMD Kondensator KERKO 22pF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 22pF 50V NP0 0805 (MOQ:50x)
C101	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C201	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C202	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C203	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C204	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C205	19512	SMD Kondensator KERKO 1nF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 1nF 50V NP0 0805 (MOQ:50x)
C206	27962	Kondensator AL-ELKO 22uF 16V CA	Capacitor AL-ELKO 22uF 16V CA
C207	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C208	29112	SMD Kondensator KERKO 220pF 50V NP0 0805 (MOQ:50x)	SMD capacitor KERKO 220pF 50V NP0 0805 (MOQ:50x)
C209	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C210	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C211	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C212	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C213	25730	Kondensator AL-ELKO 4,7uF 35V	Capacitor AL-ELKO 4.7uF 35V
C214	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
C215	27962	Kondensator AL-ELKO 22uF 16V CA	Capacitor AL-ELKO 22uF 16V CA
C216	29181	SMD Kondensator KERKO 3,3nF 50V X7R 0805 (MOQ:50x)	SMD capacitor KERKO 3.3nF 50V X7R 0805 (MOQ:50x)
C217	27962	Kondensator AL-ELKO 22uF 16V CA	Capacitor AL-ELKO 22uF 16V CA
C218	19480	SMD Kondensator KERKO 100nF 50V X7R (MOQ:50x)	SMD capacitor KERKO 100nF 50V X7R (MOQ:50x)
D004	32910	LED grün	LED, green
D005	32910	LED grün	LED, green
D006	40585	LED, gelb	LED, yellow

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D007	32909	LED rot	LED, red
D008	32909	LED rot	LED, red
D009	40585	LED, gelb	LED, yellow
D010	32910	LED grün	LED, green
D011	32910	LED grün	LED, green
D013	29249	Begrenzer-Diode	Threshold diode
D014	40350	SMD Schottky-Diode D1FS4 ROE	SMD Schottky diode D1FS4 ROE
D016	40583	Pin-Diode BA389	Pin diode BA389
D201	40583	Pin-Diode BA389	Pin diode BA389
D202	40583	Pin-Diode BA389	Pin diode BA389
FI001	40588	Keramik-Filter 10,7MHz	Ceramic filter 10,7MHz
FI002	40588	Keramik-Filter 10,7MHz	Ceramic filter 10,7MHz
FU002	29531	Sicherung 0,25A DIN41662	Fuse 0.25A DIN41662
IC001	40120	IC Tuner U4062B D18P	IC tuner U4062B D18P
IC002	16275	IC TDA1576	IC TDA1576
IC003	40434	IC TL071CD	IC TL071CD
IC004	40099	SMD IC TL072CD SO8	SMD IC TL072CD SO8
IC005	45093	SMD IC NE572D SOL16	SMD IC NE572D SOL16
IC006	25136	SMD IC NE5534DT SO8	SMD IC NE5534DT SO8
IC007	32249	IC 339	IC 339
IC008	32249	IC 339	IC 339
IC009	40434	IC TL071CD	IC TL071CD
IC010	40434	IC TL071CD	IC TL071CD
IC011	25136	SMD IC NE5534DT SO8	SMD IC NE5534DT SO8
IC012	45055	IC LM2940T	IC LM2940T
IC201	45537	SMD IC TL 062 CD (Texas)	SMD IC TL 062 CD (Texas)
IC202	45536	SMD IC TL 064 CD	SMD IC TL 064 CD
IC203	40586	IC 4053 B	IC 4053 B
L001	42771	HF-Spule	RF coil
L002	35886	HF-Spule	RF coil
L003	35889	HF-Spule	RF coil
L004	41350	HF-Spule	RF coil
L005	37191	SMD Spule 1uH	SMD coil 1uH
L006	35886	HF-Spule	RF coil
L007	44242	HF-Spule	RF coil
L008	35889	HF-Spule	RF coil
L009A	40587	SMD Spule 0,68uH 138-170, 205-250MHz	SMD coil 0.68uH 138-170, 205-250MHz
L009B	37191	SMD Spule 1uH 170-205MHz	SMD coil 1uH 170-205MHz
L010	41352	HF-Spule	RF coil
L011	35887	HF-Spule	RF coil
L012	35890	HF-Spule	RF coil
L013	35894	HF-Spule	RF coil
L014	40444	HF-Filter	RF filter
L015	34394	SMD Spule 22uH	SMD coil 22uH
L016	40444	HF-Filter	RF filter
L017	34394	SMD Spule 22uH	SMD coil 22uH
L018	45592	HF-Spule 10,7MHz	RF coil 10.7MHz
L019	23581	Spule 33uH	Coil 33uH
L020	28023	HF-Drossel 40uH	RF inductor 40uH
L201	41344	SMD Spule 150uH	SMD coil 150uH
L202	37191	SMD Spule 1uH	SMD coil 1uH
L203	37191	SMD Spule 1uH	SMD coil 1uH
L204	37191	SMD Spule 1uH	SMD coil 1uH
P001	37188	Trimmwiderstand 10k	Resistor, variable 10k
P002	34480	Trimmwiderstand 1k	Resistor, variable 1k
P003	40581	Potentiometer 10k	Potentiometer 10k
P004	19820	Potentiometer 1k	Potentiometer 1k
P005	41234	Potentiometer 2k5	Potentiometer 2k5
P201	40112	Trimmwiderstand 100k	Resistor, variable 100k
P202	40111	Trimmwiderstand 2k	Resistor, variable 2k
Q001	40435	Quarz	Crystal
R001	28742	SMD Widerstand 56R 5% 1206 (MOQ:50x)	SMD resistor 56R 5% 1206 (MOQ:50x)
R002	19469	SMD Widerstand 56k 5% 1206 (MOQ:50x)	SMD resistor 56k 5% 1206 (MOQ:50x)
R003	19507	SMD Widerstand 33k 5% 1206 (MOQ:50x)	SMD resistor 33k 5% 1206 (MOQ:50x)
R004	19464	SMD Widerstand 470R 5% 1206 (MOQ:50x)	SMD resistor 470R 5% 1206 (MOQ:50x)
R005	28743	SMD Widerstand 100R 5% 1206 (MOQ:50x)	SMD resistor 100R 5% 1206 (MOQ:50x)
R006	28743	SMD Widerstand 100R 5% 1206 (MOQ:50x)	SMD resistor 100R 5% 1206 (MOQ:50x)
R007	28743	SMD Widerstand 100R 5% 1206 (MOQ:50x)	SMD resistor 100R 5% 1206 (MOQ:50x)
R008	28743	SMD Widerstand 100R 5% 1206 (MOQ:50x)	SMD resistor 100R 5% 1206 (MOQ:50x)
R009	19506	SMD Widerstand 22k 5% 1206 (MOQ:50x)	SMD resistor 22k 5% 1206 (MOQ:50x)
R010	19506	SMD Widerstand 22k 5% 1206 (MOQ:50x)	SMD resistor 22k 5% 1206 (MOQ:50x)

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R011	19467	SMD Widerstand 3k3 5% 1206 (MOQ:50x)	SMD resistor 3k3 5% 1206 (MOQ:50x)
R012	28688	SMD Widerstand 390R 5% 1206 (MOQ:50x)	SMD resistor 390R 5% 1206 (MOQ:50x)
R013	28688	SMD Widerstand 390R 5% 1206 (MOQ:50x)	SMD resistor 390R 5% 1206 (MOQ:50x)
R014	32246	SMD Widerstand 15k 5% 1206 (MOQ:50x)	SMD resistor 15k 5% 1206 (MOQ:50x)
R015	19476	SMD Widerstand 47k 5% 1206 (MOQ:50x)	SMD resistor 47k 5% 1206 (MOQ:50x)
R016	28689	SMD Widerstand 39k 5% 1206 (MOQ:50x)	SMD resistor 39k 5% 1206 (MOQ:50x)
R017	19465	SMD Widerstand 1k 5% 1206 (MOQ:50x)	SMD resistor 1k 5% 1206 (MOQ:50x)
R018	19465	SMD Widerstand 1k 5% 1206 (MOQ:50x)	SMD resistor 1k 5% 1206 (MOQ:50x)
R019	19467	SMD Widerstand 3k3 5% 1206 (MOQ:50x)	SMD resistor 3k3 5% 1206 (MOQ:50x)
R020	19505	SMD Widerstand 10k 5% 1206 (MOQ:50x)	SMD resistor 10k 5% 1206 (MOQ:50x)
R021	19476	SMD Widerstand 47k 5% 1206 (MOQ:50x)	SMD resistor 47k 5% 1206 (MOQ:50x)
R022	19506	SMD Widerstand 22k 5% 1206 (MOQ:50x)	SMD resistor 22k 5% 1206 (MOQ:50x)
R023	19506	SMD Widerstand 22k 5% 1206 (MOQ:50x)	SMD resistor 22k 5% 1206 (MOQ:50x)
R024	29104	SMD Widerstand 12k 5% 0805 (MOQ:50x)	SMD resistor 12k 5% 0805 (MOQ:50x)
R025	19476	SMD Widerstand 47k 5% 1206 (MOQ:50x)	SMD resistor 47k 5% 1206 (MOQ:50x)
R026	19464	SMD Widerstand 470R 5% 1206 (MOQ:50x)	SMD resistor 470R 5% 1206 (MOQ:50x)
R028	29101	SMD Widerstand 5k6 5% 0805 (MOQ:50x)	SMD resistor 5k6 5% 0805 (MOQ:50x)
R029	29167	SMD Widerstand 22k 5% 0805 (MOQ:50x)	SMD resistor 22k 5% 0805 (MOQ:50x)
R030	29167	SMD Widerstand 22k 5% 0805 (MOQ:50x)	SMD resistor 22k 5% 0805 (MOQ:50x)
R031	32819	SMD Widerstand 270R 5% 0805 (MOQ:50x)	SMD resistor 270R 5% 0805 (MOQ:50x)
R032	28689	SMD Widerstand 39k 5% 1206 (MOQ:50x)	SMD resistor 39k 5% 1206 (MOQ:50x)
R033	29107	SMD Widerstand 47k 5% 0805 (MOQ:50x)	SMD resistor 47k 5% 0805 (MOQ:50x)
R034	29107	SMD Widerstand 47k 5% 0805 (MOQ:50x)	SMD resistor 47k 5% 0805 (MOQ:50x)
R035	29186	SMD Widerstand 68k 5% 1206 (MOQ:50x)	SMD resistor 68k 5% 1206 (MOQ:50x)
R036	29182	SMD Widerstand 1R 10% 1206 (MOQ:50x)	SMD resistor 1R 10% 1206 (MOQ:50x)
R037	29182	SMD Widerstand 1R 10% 1206 (MOQ:50x)	SMD resistor 1R 10% 1206 (MOQ:50x)
R038	29186	SMD Widerstand 68k 5% 1206 (MOQ:50x)	SMD resistor 68k 5% 1206 (MOQ:50x)
R039	28688	SMD Widerstand 390R 5% 1206 (MOQ:50x)	SMD resistor 390R 5% 1206 (MOQ:50x)
R040	19505	SMD Widerstand 10k 5% 1206 (MOQ:50x)	SMD resistor 10k 5% 1206 (MOQ:50x)
R041	28743	SMD Widerstand 100R 5% 1206 (MOQ:50x)	SMD resistor 100R 5% 1206 (MOQ:50x)
R042	28743	SMD Widerstand 100R 5% 1206 (MOQ:50x)	SMD resistor 100R 5% 1206 (MOQ:50x)
R043	28687	SMD Widerstand 120R 5% 1206 (MOQ:50x)	SMD resistor 120R 5% 1206 (MOQ:50x)
R044	28687	SMD Widerstand 120R 5% 1206 (MOQ:50x)	SMD resistor 120R 5% 1206 (MOQ:50x)
R045	19517	SMD Widerstand 10R 5% 1206 (MOQ:50x)	SMD resistor 10R 5% 1206 (MOQ:50x)
R046	33087	SMD Widerstand 33R 5% 1206 (MOQ:50x)	SMD resistor 33R 5% 1206 (MOQ:50x)
R047	19476	SMD Widerstand 47k 5% 1206 (MOQ:50x)	SMD resistor 47k 5% 1206 (MOQ:50x)
R048	19476	SMD Widerstand 47k 5% 1206 (MOQ:50x)	SMD resistor 47k 5% 1206 (MOQ:50x)
R049	19476	SMD Widerstand 47k 5% 1206 (MOQ:50x)	SMD resistor 47k 5% 1206 (MOQ:50x)
R050	19476	SMD Widerstand 47k 5% 1206 (MOQ:50x)	SMD resistor 47k 5% 1206 (MOQ:50x)
R051	19476	SMD Widerstand 47k 5% 1206 (MOQ:50x)	SMD resistor 47k 5% 1206 (MOQ:50x)
R052	28830	SMD Widerstand 220R 5% 1206 (MOQ:50x)	SMD resistor 220R 5% 1206 (MOQ:50x)
R053	28830	SMD Widerstand 220R 5% 1206 (MOQ:50x)	SMD resistor 220R 5% 1206 (MOQ:50x)
R054	28687	SMD Widerstand 120R 5% 1206 (MOQ:50x)	SMD resistor 120R 5% 1206 (MOQ:50x)
R055	28687	SMD Widerstand 120R 5% 1206 (MOQ:50x)	SMD resistor 120R 5% 1206 (MOQ:50x)
R056	19505	SMD Widerstand 10k 5% 1206 (MOQ:50x)	SMD resistor 10k 5% 1206 (MOQ:50x)
R057	19517	SMD Widerstand 10R 5% 1206 (MOQ:50x)	SMD resistor 10R 5% 1206 (MOQ:50x)
R058	19517	SMD Widerstand 10R 5% 1206 (MOQ:50x)	SMD resistor 10R 5% 1206 (MOQ:50x)
R059	19517	SMD Widerstand 10R 5% 1206 (MOQ:50x)	SMD resistor 10R 5% 1206 (MOQ:50x)
R060	28687	SMD Widerstand 120R 5% 1206 (MOQ:50x)	SMD resistor 120R 5% 1206 (MOQ:50x)
R061	19505	SMD Widerstand 10k 5% 1206 (MOQ:50x)	SMD resistor 10k 5% 1206 (MOQ:50x)
R063	28687	SMD Widerstand 120R 5% 1206 (MOQ:50x)	SMD resistor 120R 5% 1206 (MOQ:50x)
R064	28830	SMD Widerstand 220R 5% 1206 (MOQ:50x)	SMD resistor 220R 5% 1206 (MOQ:50x)
R065	28830	SMD Widerstand 220R 5% 1206 (MOQ:50x)	SMD resistor 220R 5% 1206 (MOQ:50x)
R066	19467	SMD Widerstand 3k3 5% 1206 (MOQ:50x)	SMD resistor 3k3 5% 1206 (MOQ:50x)
R067	37187	SMD Widerstand 47R 10% 1206 (MOQ:50x)	SMD resistor 47R 10% 1206 (MOQ:50x)
R068	28532	SMD Widerstand 47k 5% 1206 (MOQ:50x)	SMD resistor 47k 5% 1206 (MOQ:50x)
R069	19469	SMD Widerstand 56k 5% 1206 (MOQ:50x)	SMD resistor 56k 5% 1206 (MOQ:50x)
R070	28688	SMD Widerstand 390R 5% 1206 (MOQ:50x)	SMD resistor 390R 5% 1206 (MOQ:50x)
R071	29184	SMD Widerstand 560R 5% 1206 (MOQ:50x)	SMD resistor 560R 5% 1206 (MOQ:50x)
R072	19682	SMD Widerstand 820R 5% 1206 (MOQ:50x)	SMD resistor 820R 5% 1206 (MOQ:50x)
R073	19505	SMD Widerstand 10k 5% 1206 (MOQ:50x)	SMD resistor 10k 5% 1206 (MOQ:50x)
R074	29186	SMD Widerstand 68k 5% 1206 (MOQ:50x)	SMD resistor 68k 5% 1206 (MOQ:50x)
R075	28742	SMD Widerstand 56R 5% 1206 (MOQ:50x)	SMD resistor 56R 5% 1206 (MOQ:50x)
R076	19470	SMD Widerstand 100k 5% 1206 (MOQ:50x)	SMD resistor 100k 5% 1206 (MOQ:50x)
R077	19505	SMD Widerstand 10k 5% 1206 (MOQ:50x)	SMD resistor 10k 5% 1206 (MOQ:50x)
R078	28814	SMD Widerstand 18k 5 % 1206 (MOQ:50x)	SMD resistor 18k 5% 1206 (MOQ:50x)
R079	19469	SMD Widerstand 56k 5% 1206 (MOQ:50x)	SMD resistor 56k 5% 1206 (MOQ:50x)
R080	19466	SMD Widerstand 22k 5% 1206 (MOQ:50x)	SMD resistor 22k 5% 1206 (MOQ:50x)
R081	19465	SMD Widerstand 1k 5% 1206 (MOQ:50x)	SMD resistor 1k 5% 1206 (MOQ:50x)
R082	28688	SMD Widerstand 390R 5% 1206 (MOQ:50x)	SMD resistor 390R 5% 1206 (MOQ:50x)
R083	28688	SMD Widerstand 390R 5% 1206 (MOQ:50x)	SMD resistor 390R 5% 1206 (MOQ:50x)
R084	19505	SMD Widerstand 10k 5% 1206 (MOQ:50x)	SMD resistor 10k 5% 1206 (MOQ:50x)
R085	29186	SMD Widerstand 68k 5% 1206 (MOQ:50x)	SMD resistor 68k 5% 1206 (MOQ:50x)

POS	IDENT	BEZEICHNUNG	DESCRIPTION
R086	33087	SMD Widerstand 33R 5% 1206 (MOQ:50x)	SMD resistor 33R 5% 1206 (MOQ:50x)
R087	19505	SMD Widerstand 10k 5% 1206 (MOQ:50x)	SMD resistor 10k 5% 1206 (MOQ:50x)
R088	19505	SMD Widerstand 10k 5% 1206 (MOQ:50x)	SMD resistor 10k 5% 1206 (MOQ:50x)
R089	32246	SMD Widerstand 15k 5% 1206 (MOQ:50x)	SMD resistor 15k 5% 1206 (MOQ:50x)
R090	28742	SMD Widerstand 56R 5% 1206 (MOQ:50x)	SMD resistor 56R 5% 1206 (MOQ:50x)
R091	19475	SMD Widerstand 10M 10% 1206 (MOQ:50x)	SMD resistor 10M 10% 1206 (MOQ:50x)
R092	28833	SMD Widerstand 470k 5% 1206 (MOQ:50x)	SMD resistor 470k 5% 1206 (MOQ:50x)
R093	19467	SMD Widerstand 3k3 5% 1206 (MOQ:50x)	SMD resistor 3k3 5% 1206 (MOQ:50x)
R094	19472	SMD Widerstand 220k 5% 1206 (MOQ:50x)	SMD resistor 220k 5% 1206 (MOQ:50x)
R095	28833	SMD Widerstand 470k 5% 1206 (MOQ:50x)	SMD resistor 470k 5% 1206 (MOQ:50x)
R096	19507	SMD Widerstand 33k 5% 1206 (MOQ:50x)	SMD resistor 33k 5% 1206 (MOQ:50x)
R097	19475	SMD Widerstand 10M 10% 1206 (MOQ:50x)	SMD resistor 10M 10% 1206 (MOQ:50x)
R098	19505	SMD Widerstand 10k 5% 1206 (MOQ:50x)	SMD resistor 10k 5% 1206 (MOQ:50x)
R099	29104	SMD Widerstand 12k 5% 0805 (MOQ:50x)	SMD resistor 12k 5% 0805 (MOQ:50x)
R100	29107	SMD Widerstand 47k 5% 0805 (MOQ:50x)	SMD resistor 47k 5% 0805 (MOQ:50x)
R101	29107	SMD Widerstand 47k 5% 0805 (MOQ:50x)	SMD resistor 47k 5% 0805 (MOQ:50x)
R102	28690	SMD Widerstand 68k 5% 1206 (MOQ:50x)	SMD resistor 68k 5% 1206 (MOQ:50x)
R103	37807	SMD Widerstand 47M 5% 1206 (MOQ:50x)	SMD resistor 47M 5% 1206 (MOQ:50x)
R104	19470	SMD Widerstand 100k 5% 1206 (MOQ:50x)	SMD resistor 100k 5% 1206 (MOQ:50x)
R105	28814	SMD Widerstand 18k 5 % 1206 (MOQ:50x)	SMD resistor 18k 5% 1206 (MOQ:50x)
R106	28743	SMD Widerstand 100R 5% 1206 (MOQ:50x)	SMD resistor 100R 5% 1206 (MOQ:50x)
R107	28743	SMD Widerstand 100R 5% 1206 (MOQ:50x)	SMD resistor 100R 5% 1206 (MOQ:50x)
R108	33087	SMD Widerstand 33R 5% 1206 (MOQ:50x)	SMD resistor 33R 5% 1206 (MOQ:50x)
R109	19465	SMD Widerstand 1k 5% 1206 (MOQ:50x)	SMD resistor 1k 5% 1206 (MOQ:50x)
R110	29186	SMD Widerstand 68k 5% 1206 (MOQ:50x)	SMD resistor 68k 5% 1206 (MOQ:50x)
R111	29167	SMD Widerstand 22k 5% 0805 (MOQ:50x)	SMD resistor 22k 5% 0805 (MOQ:50x)
R201	19466	SMD Widerstand 22k 5% 1206 (MOQ:50x)	SMD resistor 22k 5% 1206 (MOQ:50x)
R202	19466	SMD Widerstand 22k 5% 1206 (MOQ:50x)	SMD resistor 22k 5% 1206 (MOQ:50x)
R203	19465	SMD Widerstand 1k 5% 1206 (MOQ:50x)	SMD resistor 1k 5% 1206 (MOQ:50x)
R204	19465	SMD Widerstand 1k 5% 1206 (MOQ:50x)	SMD resistor 1k 5% 1206 (MOQ:50x)
R205	19465	SMD Widerstand 1k 5% 1206 (MOQ:50x)	SMD resistor 1k 5% 1206 (MOQ:50x)
R206	28532	SMD Widerstand 47k 5% 1206 (MOQ:50x)	SMD resistor 47k 5% 1206 (MOQ:50x)
R207	19465	SMD Widerstand 1k 5% 1206 (MOQ:50x)	SMD resistor 1k 5% 1206 (MOQ:50x)
R208	19507	SMD Widerstand 33k 5% 1206 (MOQ:50x)	SMD resistor 33k 5% 1206 (MOQ:50x)
R209	32246	SMD Widerstand 15k 5% 1206 (MOQ:50x)	SMD resistor 15k 5% 1206 (MOQ:50x)
R210	32246	SMD Widerstand 15k 5% 1206 (MOQ:50x)	SMD resistor 15k 5% 1206 (MOQ:50x)
R211	19465	SMD Widerstand 1k 5% 1206 (MOQ:50x)	SMD resistor 1k 5% 1206 (MOQ:50x)
R212	28689	SMD Widerstand 39k 5% 1206 (MOQ:50x)	SMD resistor 39k 5% 1206 (MOQ:50x)
R213	37807	SMD Widerstand 47M 5% 1206 (MOQ:50x)	SMD resistor 47M 5% 1206 (MOQ:50x)
R214	28833	SMD Widerstand 470k 5% 1206 (MOQ:50x)	SMD resistor 470k 5% 1206 (MOQ:50x)
R215	19470	SMD Widerstand 100k 5% 1206 (MOQ:50x)	SMD resistor 100k 5% 1206 (MOQ:50x)
R216	40580	SMD Widerstand 680k 5% 1206 (MOQ:50x)	SMD resistor 680k 5% 1206 (MOQ:50x)
R217	19506	SMD Widerstand 22k 5% 1206 (MOQ:50x)	SMD resistor 22k 5% 1206 (MOQ:50x)
R218	19506	SMD Widerstand 22k 5% 1206 (MOQ:50x)	SMD resistor 22k 5% 1206 (MOQ:50x)
R219	19465	SMD Widerstand 1k 5% 1206 (MOQ:50x)	SMD resistor 1k 5% 1206 (MOQ:50x)
R220	32115	SMD Widerstand 1M 5% 1206 (MOQ:50x)	SMD resistor 1M 5% 1206 (MOQ:50x)
R221	28831	SMD Widerstand 180k 5% 1206 (MOQ:50x)	SMD resistor 180k 5% 1206 (MOQ:50x)
R222	28532	SMD Widerstand 47k 5% 1206 (MOQ:50x)	SMD resistor 47k 5% 1206 (MOQ:50x)
R223	28532	SMD Widerstand 47k 5% 1206 (MOQ:50x)	SMD resistor 47k 5% 1206 (MOQ:50x)
R224	28532	SMD Widerstand 47k 5% 1206 (MOQ:50x)	SMD resistor 47k 5% 1206 (MOQ:50x)
R225	19505	SMD Widerstand 10k 5% 1206 (MOQ:50x)	SMD resistor 10k 5% 1206 (MOQ:50x)
R226	28532	SMD Widerstand 47k 5% 1206 (MOQ:50x)	SMD resistor 47k 5% 1206 (MOQ:50x)
R227	23725	Widerstand 274R 1% 0207	Resistor 274R 1% 0207
R301	19505	SMD Widerstand 10k 5% 1206 (MOQ:50x)	SMD resistor 10k 5% 1206 (MOQ:50x)
R302	19505	SMD Widerstand 10k 5% 1206 (MOQ:50x)	SMD resistor 10k 5% 1206 (MOQ:50x)
S002	32906	Druckschalter	Press switch
T001	24134	SMD Transistor BFS20, SOT23	SMD transistor BFS20 SOT23
T002	24134	SMD Transistor BFS20, SOT23	SMD transistor BFS20 SOT23
T003	32881	Transistor BFS19 SOT23	Transistor BFS19 SOT23
T004	32467	SMD Transistor BC850B SOT 23	SMD transistor BC850B SOT23
T005	34469	N-Kanal FET BFT46 SOT23	N channel FET BFT46 SOT23
T006	32468	SMD Transistor BC860B SOT23	SMD transistor BC860B SOT23
T007	32467	SMD Transistor BC850B SOT 23	SMD transistor BC850B SOT23
T008	32468	SMD Transistor BC860B SOT23	SMD transistor BC860B SOT23
T009	32467	SMD Transistor BC850B SOT 23	SMD transistor BC850B SOT23
T010	32468	SMD Transistor BC860B SOT23	SMD transistor BC860B SOT23
T011	32468	SMD Transistor BC860B SOT23	SMD transistor BC860B SOT23
T012	32468	SMD Transistor BC860B SOT23	SMD transistor BC860B SOT23
T013	32467	SMD Transistor BC850B SOT 23	SMD transistor BC850B SOT23
T014	32468	SMD Transistor BC860B SOT23	SMD transistor BC860B SOT23
T015	32467	SMD Transistor BC850B SOT 23	SMD transistor BC850B SOT23
T201	32467	SMD Transistor BC850B SOT 23	SMD transistor BC850B SOT23
T202	32467	SMD Transistor BC850B SOT 23	SMD transistor BC850B SOT23

POS	IDENT	BEZEICHNUNG	DESCRIPTION
T203	34469	N-Kanal FET BFT46 SOT23	N channel FET BFT46 SOT23
T204	32467	SMD Transistor BC850B SOT 23	SMD transistor BC850B SOT23
TR001	40590	Transformator, NF 1:1 Sym/Sym	Transformer, RF 1:1 Sym/Sym
VC001	37356	Trimmkondensator 1,4/14pF NP0	Capacitor, variable 1,4/14pF NP0
VC002	37356	Trimmkondensator 1,4/14pF NP0	Capacitor, variable 1,4/14pF NP0
VC003	37356	Trimmkondensator 1,4/14pF NP0	Capacitor, variable 1,4/14pF NP0
VC004	37356	Trimmkondensator 1,4/14pF NP0	Capacitor, variable 1,4/14pF NP0
VC005	37356	Trimmkondensator 1,4/14pF NP0	Capacitor, variable 1,4/14pF NP0
VC006	37356	Trimmkondensator 1,4/14pF NP0	Capacitor, variable 1,4/14pF NP0
ZZ010	52325	Faltschachtel	Folding box
ZZ011	52323	Einsatz	Insert
ZZ020	52326	Bedienungsanleitung EM1005HDP	Instructions for use EM1005HDP
ZZ030	52156	Service-Anleitung EM1005-90 HDP	Service manual EM1005-90 HDP